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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/691,279	10/22/2003	Michael J. Wookey	30014200-1119	4924

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EXAMINER

HICKS, MICHAEL J

ART UNIT	PAPER NUMBER
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2165

DATE MAILED: 05/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/691,279

Applicant(s)

WOOKEY ET AL.

Examiner

Michael J. Hicks

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-12 Pending.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 1-3 and 5-10 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claims 1-3 and 5 by Applicants own Admission (Specification, Page 52) may be implemented entirely as software, and as such is considered to be software per se.

Claim 4 includes a storage controller (e.g. a hardware implemented memory, see Figure 2 of Applicants disclosure) and therefore qualifies as statutory.

Claims 6-10 do not qualify as statutory due to the fact that they indicate being 'computer-readable medium containing instructions', which may be construed to be a signal or other transmission medium.

Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in Sec. 101.

First, a claimed signal is clearly not a "process" under Sec. 101 because it is not a series of steps. The other three Sec. 101 classes of machine, compositions of matter and manufactures "relate to structural entities and can be grouped as 'product' claims in order to contrast them with process claims." 1 D. Chisum, Patents Sec. 1.02 (1994). The three product classes have traditionally required physical structure or material.

"The term machine includes every mechanical device or combination of mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result." Corning v. Burden, 56 U.S. (15 How.) 252, 267 (1854). A modern definition of machine would no doubt include electronic devices which perform functions. Indeed, devices such as flip-flops and computers are referred to in computer science as sequential machines. A claimed signal has no physical structure, does not itself perform any useful, concrete and tangible result and, thus, does not fit within the definition of a machine.

A "composition of matter" "covers all compositions of two or more substances and includes all composite articles, whether they be results of chemical union, or of mechanical mixture, or whether they be gases, fluids, powders or solids." Shell Development Co. v. Watson, 149 F. Supp. 279, 280, 113 USPQ 265, 266 (D.D.C. 1957), aff'd, 252 F.2d 861, 116 USPQ 428 (D.C. Cir. 1958). A claimed signal is not matter, but a form of energy, and therefore is not a composition of matter.

The Supreme Court has read the term "manufacture" in accordance with its dictionary definition to mean "the production of articles for use from raw or prepared

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materials by giving to these materials new forms, qualities, properties, or combinations, whether by hand-labor or by machinery." *Diamond v. Chakrabarty*, 447 U.S. 303, 308, 206 USPQ 193, 196-97 (1980) (quoting *American Fruit Growers, Inc. v. Brogdex Co.*, 283 U.S. 1, 11, 8 USPQ 131, 133 (1931), which, in turn, quotes the Century Dictionary). Other courts have applied similar definitions. See *American Disappearing Bed Co. v. Arnaelsteen*, 182 F. 324, 325 (9th Cir. 1910), cert. denied, 220 U.S. 622 (1911). These definitions require physical substance, which a claimed signal does not have. Congress can be presumed to be aware of an administrative or judicial interpretation of a statute and to adopt that interpretation when it re-enacts a statute without change. *Lorillard v. Pons*, 434 U.S. 575, 580 (1978). Thus, Congress must be presumed to have been aware of the interpretation of manufacture in *American Fruit Growers* when it passed the 1952 Patent Act.

A manufacture is also defined as the residual class of product. 1 Chisum, Sec. 1.02[3] (citing W. Robinson, *The Law of Patents for Useful Inventions* 270 (1890)). A product is a tangible physical article or object, some form of matter, which a signal is not. That the other two product classes, machine and composition of matter, require physical matter is evidence that a manufacture was also intended to require physical matter. A signal, a form of energy, does not fall within either of the two definitions of manufacture. Thus, a signal does not fall within one of the four statutory classes of Sec. 101.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-12 rejected under 35 U.S.C. 103(a) as being unpatentable over Lehner et al ("Building an Information Marketplace Using a Content and Memory Based Publish/Subscribe System", Advanced Techniques in Personalized Information Delivery; Fredrick-Alexander Universitat Erlangen-Nurnberg, Pgs 27-46; 2001 and referred to hereinafter as Lehner) in view of Foster et al. ("OSGA Data Services", Data Access and Integration Services; August 14, 2003 and referred to hereinafter as Foster).

As per Claims 1, 6, 11, and 12, Lehner teaches a method in a data processing system having a program, computer readable medium, and system comprising: asynchronously receiving a first data at a subscriber (i.e. "...the proposed PubScribe service relies on the asynchronous communication model of publish and subscribe, a very well known concept to implement asynchronous communication in distributed systems...Thus, traditional publish/subscribe systems implement a document based asynchronous and anonymous dispatching of messages." The preceding text excerpt clearly indicates that data is asynchronously received at a subscriber through the publish/subscribe system.) (Figure 1.1; Page 28, Paragraphs 2-3); determining whether the subscriber subscribes to additional data after receiving the first data (i.e. "From a structural point of view, the PubScribe system provides customized storage of former messages to be able to provide subscription services not only to the current state of an entity (current weather condition) but also

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to access previously published messages to computer the accurate result of a subscription..." The preceding text excerpt clearly indicates that after a data is received, it is recorded so that after the reception of the data, it may be referred back to in order to determine subscription to, and initiate delivery of, additional data.) (Page 29, Paragraph 3); and querying for the additional data responsive to a determination that the subscriber subscribes to additional data (i.e. *"Ex-nunc subscriptions are based on a set of messages. This set of messages is constructed starting from an empty set at the time of registering a subscription...Evaluations in those applications areas are not only based on snapshot data (current message), but on historical data either stored locally within the subscription management system or within an underlying database (usually a data warehouse)."* The preceding text excerpt clearly indicates that if it is determined that the subscriber subscribed to additional data after receiving the first data, the additional data is found via query in the database and returned to the subscriber as part of the set of messages.) (Page 28, Paragraph 4; Page 29, Paragraph 1; Page 32, Paragraph 3). Also note that performing the aforementioned operations requires a memory and a processor.

Lehner fails to teach that the data received is a datatype.

Foster teaches that the data received is a datatype (i.e. *"For example, a file containing geographical data might be made accessible as an image via a data service that implements a 'JPEG Image' virtualization, with SDEs defining size, resolution, and color characteristics, and operations provided for reading and modifying regions of the image. Another virtualization of the same data could present it as a relational database of coordinate-based information, with various specifics of the schema (e.g., table names, column names, types) as SDEs, and SQL as its operations for querying and updating the geographic data...A many-to-one mapping can also occur when different service interfaces are defined to the same underlying data virtualization that provide different subsets of available functionality..."* The preceding text excerpt clearly indicates that the data may be a datatype (e.g. a template/class for enabling a user to view information in an application specific manner).) (Page 2, Paragraph 4; Page 5, Paragraph 5).

It would have been obvious to one skilled in the art at the time of Applicants invention to modify the teachings of Lehner with the teachings of Foster to include that the data received is a datatype with the motivation of providing a service which implements one or more of four base data interfaces to enable access to, and management of data resources in a distributed environment, including service instances and dynamic service creation (Foster, Abstract).

As per Claims 2 and 7, Lehner teaches asynchronously receiving at least one of the additional data (i.e. *"Thus, traditional publish/subscribe systems implement a document based asynchronous and anonymous dispatching of messages... Ex-nunc subscriptions are based on a set of messages. This set of messages is constructed starting from an empty set at the time of registering a subscription..."* The preceding text excerpt clearly indicates that the additional data is received a the subscriber as part of a set of messages, wherein messages are received asynchronously.) (Page 28, Paragraphs 2-3; Page 32, Paragraph 3).

Lehner fails to teach that the data received is a datatype.

Foster teaches that the data received is a datatype (i.e. *"For example, a file containing geographical data might be made accessible as an image via a data service that implements a 'JPEG Image' virtualization, with SDEs defining size, resolution, and color characteristics, and operations provided for reading and modifying regions of the image. Another virtualization of the same data could present it as a relational database of coordinate-based information, with various specifics of the schema (e.g., table names, column names, types) as SDEs, and SQL as its operations for querying and updating the geographic data...A many-to-one mapping can also occur when different service interfaces are defined to the same underlying data virtualization that provide different subsets of available functionality..."* The preceding text excerpt clearly indicates that the data may be a datatype (e.g. a

template/class for enabling a user to view information in an application specific manner).) (Page 2, Paragraph 4; Page 5, Paragraph 5).

It would have been obvious to one skilled in the art at the time of Applicants invention to modify the teachings of Lehner with the teachings of Foster to include that the data received is a datatype with the motivation of providing a service which implements one or more of four base data interfaces to enable access to, and management of data resources in a distributed environment, including service instances and dynamic service creation (Foster, Abstract).

As per Claims 3 and 8, Lehner fails to teach the first datatype has a metadata that describes a data and a reference to the data, the data being maintained separately from the first datatype, the metadata including a key that enables the first datatype to be joined with other datatypes having the key in their respective metadata, and wherein determining whether the subscriber subscribes to additional datatypes comprises identifying the key in the first datatype.

Foster teaches the first datatype has a metadata that describes a data and a reference to the data (i.e. *"data virtualization...can involve simple data access or computational transformations of underlying data...SDEs may also be used to describe 'metadata' about data virtualization, such as who produced the data, its purpose, and abstract identifiers and properties of portions of the data."* The preceding text excerpt clearly indicates that the datatype/virtualization includes metadata that describes the data and a reference to the data (e.g. the data must be referenced in order to be accessed.) (Page 5, Paragraph; Page 6, Paragraph 4), the data being maintained separately from the first datatype (i.e. *"Mappings between data virtualizations and underlying data sources and*

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services may be one-to-one, many-to-one, one-to-many, or many-to-many." The preceding text excerpt clearly indicates that because many different mapping are possible, the data and the datatypes/virtualizations are maintained separately.) (Page 5, Paragraph 6), the metadata including a key that enables the first datatype to be joined with other datatypes having the key in their respective metadata (i.e. *"For example, a file system might support data virtualizations for the file-system as a whole...arbitrary subsets of files in the file system...and/or individual files."* The preceding text excerpt clearly indicates that many datatypes may be linked via a metadata key (e.g. in this case the key may be the source of the data, as above).) (Page 5, Paragraph 6), and wherein determining whether the subscriber subscribes to additional datatypes comprises identifying the key in the first datatype. (i.e. *"For example, a file system might support data virtualizations for the file-system as a whole...arbitrary subsets of files in the file system...and/or individual files...A many-to-one mapping can also occur when different service interfaces are defined to the same underlying data virtualization that provide different subsets of available functionality, perhaps for reasons of access control."* The preceding text excerpt clearly indicates that if the subscriber had access to (e.g. subscribed to) one granularity in the given example, all subsequent granularities would also be accessible using the source key, or an access control key can be made available to link accessible datatypes/virtualizations for the user.) (Page 5, Paragraph 6).

It would have been obvious to one skilled in the art at the time of Applicants invention to modify the teachings of Lehner with the teachings of Foster to include the first datatype has a metadata that describes a data and a reference to the data, the data being maintained separately from the first datatype, the metadata including a key that enables the first datatype to be joined with other datatypes having the key in their respective metadata, and wherein determining whether the subscriber subscribes to additional datatypes comprises identifying the key in the first datatype with the

motivation of providing a service which implements one or more of four base data interfaces to enable access to, and management of data resources in a distributed environment, including service instances and dynamic service creation (Foster, Abstract).

As per Claims 4 and 9, Lehner teaches that a storage controller is queried for the additional data (i.e. *"Ex-nunc subscriptions are based on a set of messages. This set of messages is constructed starting from an empty set at the time of registering a subscription...Evaluations in those applications areas are not only based on snapshot data (current message), but on historical data either stored locally within the subscription management system or within an underlying database (usually a data warehouse)."* The preceding text excerpt clearly indicates that a database/storage controller is queried for the additional data.) (Page 28, Paragraph 4; Page 29, Paragraph 1; Page 32, Paragraph 3).

Lehner fails to teach that the data is a datatype.

Foster teaches that the data is a datatype (i.e. *"For example, a file containing geographical data might be made accessible as an image via a data service that implements a 'JPEG Image' virtualization, with SDEs defining size, resolution, and color characteristics, and operations provided for reading and modifying regions of the image. Another virtualization of the same data could present it as a relational database of coordinate-based information, with various specifics of the schema (e.g., table names, column names, types) as SDEs, and SQL as its operations for querying and updating the geographic data...A many-to-one mapping can also occur when different service interfaces are defined to the same underlying data virtualization that provide different subsets of available functionality..."* The preceding text excerpt clearly indicates that the data may be a datatype (e.g. a template/class for enabling a user to view information in an application specific manner).) (Page 2, Paragraph 4; Page 5, Paragraph 5).

It would have been obvious to one skilled in the art at the time of Applicants invention to modify the teachings of Lehner with the teachings of Foster to include that

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the data is a datatype with the motivation of providing a service which implements one or more of four base data interfaces to enable access to, and management of data resources in a distributed environment, including service instances and dynamic service creation (Foster, Abstract).

As per Claims 5 and 10, Lehner teaches subscribing to the first data and at least one of the additional data (i.e. *"This paper proposes the PubScribe framework using a content and memory based publish/subscribe system... Ex-nunc subscriptions are based on a set of messages. This set of messages is constructed starting from an empty set at the time of registering a subscription..."* The preceding text excerpt clearly indicates that subscriptions are possible, and more specifically Ex-nunc type subscriptions are available which would include a subscription to the first and additional data.) (Abstract; Page 32, Paragraph 3).

Lehner fails to teach that the data is a datatype.

Foster teaches that the data is a datatype (i.e. *"For example, a file containing geographical data might be made accessible as an image via a data service that implements a 'JPEG Image' virtualization, with SDEs defining size, resolution, and color characteristics, and operations provided for reading and modifying regions of the image. Another virtualization of the same data could present it as a relational database of coordinate-based information, with various specifics of the schema (e.g., table names, column names, types) as SDEs, and SQL as its operations for querying and updating the geographic data...A many-to-one mapping can also occur when different service interfaces are defined to the same underlying data virtualization that provide different subsets of available functionality..."* The preceding text excerpt clearly indicates that the data may be a datatype (e.g. a template/class for enabling a user to view information in an application specific manner).) (Page 2, Paragraph 4; Page 5, Paragraph 5).

It would have been obvious to one skilled in the art at the time of Applicants invention to modify the teachings of Lehner with the teachings of Foster to include that the data is a datatype with the motivation of providing a service which implements one or more of four base data interfaces to enable access to, and management of data resources in a distributed environment, including service instances and dynamic service creation (Foster, Abstract).

Points of Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Hicks whose telephone number is (571) 272-2670. The examiner can normally be reached on Monday - Friday 8:30a - 5:00p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on (571) 272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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